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ABSTRACT

The urban neighborhood, long of interest to city planners and sociologists, has in recent years become of increasing concern to public policy-makers. This new concern has called attention to a large gap in the municipal policy-maker's information resources. Social scientists have employed a field method, participant-observation, that can potentially provide some of the types of information sought by the policy-maker. Four modifications of this method, intended to make this method more applicable to the needs of the policy-maker, are tested in this study: (1) several neighborhoods have to be studied simultaneously, using the same general research procedures; (2) more than one investigator should study the same area; an economic approach is to have a field worker operating primarily in one area, and secondarily in another; (3) tne participant-observer's work can be designed to emphasize the quantification of observable events; and, (4) small-area data, whether available through the census, special surveys, or municipal records, can be used in close conjunction with the field work. To test these four modifications, a field study of seven New York City neighborhoods was designed, with seven participant-observers working in these neighborhoods for a three-month period (the summer of 1970). (Author/JM)

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Participant-Observation and the Development of Urban Neighborhood Policy

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PREFACE

This Report describes the application of participant-observation to issues concerning the neighborhood delivery of municipal services. The broad goals of this research have been to develop new tools for: (a) understanding how neighborhood people use and perceive municipal services, (b) assessing the needs for services, and (c) assessing the effectiveness of service delivery. An abbreviated version of this Report appears as "Towards an Urban Neighborhood Policy: Developing Relevant Information About Neighborhoods," Journal of Urban Analysis, in press.

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I. INTRODUCTION

The urban neighborhood, long of interest to city planners and sociologists, has in recent years become of increasing concern to public policy-makers. The reasons have been painfully obvious: the urban riots of the 1960s, the continued ethnic and racial changes in the city, and the feared abandonment of the central city have all had their greatest impact at the neighborhood level. Although neighborhood change has always been an integral part of urban change, never before has it played such a critical role in urban affairs, with such potentially vital consequences. Municipal governments have thus been forced to examine more closely their implicit neighborhood policies, as reflected in most instances by the distribution of municipal services, and have had to develop a sound rationale for dealing with neighborhoods.

A sign of the generalized public concern with urban neighborhoods has been the incipient movement towards neighborhood government, a form of government with surprisingly few antecedents.(1) The movement has included the use of neighborhood storefronts, proposals for decentralizing municipal services, and community control over neighborhood resources. It has been fueled by Anti-Poverty and Model Cities funds, and by at least a certain amount of lip service by mayors of major cities. Finally, it has reinforced expectations that if any reform measures effectively improve the quality of urban life, they will be neighborhood-based.

The new concern with urban neighborhoods has called attention to a large gap, however, in the municipal policy-maker's information resources. The consideration of any alternative courses of action, for instance, often requires a base of knowledge that is currently lacking about neighborhoods. This is the case whether it is desirable to establish a neighborhood "early warning system"(2) or some new program for neighborhood improvement. There is simply no system conveying relevant and timely information regarding neighborhood conditions or providing feedback about any municipal actions. Such information would seem extremely

important, especially in the light of the often rapid changes that occur in contemporary urban neighborhoods. The changes involve population turnover as well as the turnover of local institutions like retail stores, churches, and community organizations, and can result in new demands on municipal services.

The provision of such information would at first glance seem to be difficult and prohibitively expensive to establish. Some types of information, like the results of routine housing inspections and the daily amount of garbage collected, are readily available through municipal records, but are not necessarily accurate. Other types of information, like the ethnic composition of a neighborhood or the use of parks and other public facilities, can only be collected through residential surveys. In the past, such surveys have been routinely conducted in just a few cities, with the number of surveys per year and the total sample of residents both limited by the high cost per interview. Typically, the result is that a survey is conducted annually and for a sample size of less than 1000 residents for a whole metropolitan area, making neighborhood level analyses extremely difficult.* Furthermore, certain important constituents of a neighborhood, especially its young and teen-aged population, are rarely if ever surveyed.

Participant-Observation: The Traditional Approach

Yet social scientists have employed another field method, participant-observation, that can potentially provide some of the types of information sought by the policy-maker. Historically, the investigators with the earliest experience in participant-observation used it as a type of anthropological field technique. The term "participant-observation" was probably first coined by Eduard Lindeman,[3] and the first detailed statements about the method were written by J. D. Lohman[4] and F. R. Kluckhohn,[5] though, of course, many important participant-observation studies had already been completed by then, including those of the Chicago School[6] and the Lynds' study of Middletown.[7]

*Cities currently having routine surveys are Detroit (Detroit Area Survey, Institute of Social Research), Boston (Boston Area Survey, Joint Center for Urban Studies), and Dayton (Public Opinion Center).

Perhaps the most famous participant-observer study was Whyte's work on streetcorner gangs in Boston's North End during the early 1940s,[8] and in recent years there has been a strong revival of interest in that study, since students of poverty areas and deviant sub-groups in the city have increasingly found that strong social barriers exist that cannot be penetrated by any other method. As one result, there are now several firsthand accounts by participant-observers of their unique experiences in a contemporary urban setting.[9-12]

As a research method, the classical dilemma posed by participant-observation is the fact that it calls on the researcher to fulfill two roles, participating and observing, and these roles often conflict with each other. As a participant, an investigator becomes privy to many interpersonal relationships otherwise unavailable to an outsider, but these tend to be subjective experiences. As an observer, he attempts to emulate the natural scientist, dealing with the objective world of events. Whereas in other investigative roles the aim is to minimize either the subjective or the objective and to maximize the other, the well-trained participant-observer tries to maximize his opportunities in both roles. Stemming from the duality of the participant-observer role are many important problems. For one, the participant-observer collects data about events of which he may be a part; he therefore has potentially more freedom in influencing the outcomes of his own observations than in other research situations. Second, the participant role may become so dominant as to threaten the whole enterprise, either by preventing the pursuit of logical inquiries because they may threaten the rapport that has been established,[13] or because the information obtained is so sensitive that public availability of the data may lead to the injury of particular persons or groups. Third, the investigator constantly faces the problem of checking the credibility of his informants and the views they express.[14]

At the same time, the role also has some well-established advantages. Despite its potential lack of representativeness, participant-observation is the preferred method in any exploratory study, where the relevant variables and questions are not known, and where the researcher needs a flexible

framework so that he can follow any number of new developments. Even after a project is fully underway, the relative freedom can lead to completely unanticipated phenomena, such as Whyte's observations about the role of bowling in reinforcing the status hierarchy of the street-corner gang.(15) In addition, participant-observation can provide the appropriate context for the phenomena studied, and thereby help the investigator to understand the local meaning of events, customs, and language. Such benefits are usually unavailable to the survey researcher or the interviewer.

Modifying Participant-Observation

The traditional academic application of participant-observation has been on a case study basis, with a single investigator generally spending several years in the field studying a single neighborhood group.* This traditional application needs to be modified, however, in order to be useful to the policy-maker. In general, the policy-maker needs a comparative framework, in which most if not all neighborhoods of a city can be covered; he also needs some clearly objective measures of neighborhood conditions, as might be included as part of a series of neighborhood indicators, in which certain key observations could be made in a timely manner and at relatively low cost by a special team of observers.

More specifically, four kinds of modifications in the traditional use of participant-observation have to be tested. First, several neighborhoods have to be studied simultaneously, using the same general research procedures.** Such standardization can be imposed with a minimal sacrifice of the traditional strength of participant-observation, where an investigator must be free to operate according to his own progress in uncovering new information and informants; it only

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*See Refs. 8, 10, 11, and 16.

**Some of the early Chicago studies actually did develop a rudimentary comparative approach, in that the studies covered more than one small area within the same city.(31, 32) However, this theme has not been further elaborated in subsequent participant-observation research.

demands that a few of the same specific assignments be carried out in each neighborhood. With this approach, not only can neighborhoods be compared, but the study of common urban problems can also be enriched by the fact that observations have been made in a variety of natural settings. In either case, the comparative approach may reveal some of the important and unanticipatable categories for organizing field observations, as suggested by Glaser and Strauss.(17)

Second, more than one investigator should study the same area. Ideally, there should be at least two participant-observers operating in the same neighborhood. However, since such an effort may require an excessive commitment of research resources, a more economic approach is to have a field worker operating primarily in one area, and secondarily in another. In his primary area, the field worker would act in the full capacity as a participant-observer; in his secondary area, he could act more as an alternate observer of neighborhood conditions. Thus, a group of participant-observers would rotate so that every neighborhood would have more than one field worker, even though the total number of neighborhoods and field workers was identical.

Third, the participant-observer's work can be designed to emphasize the quantification of observable events. Such a task has only recently been systematically incorporated into academic field work.*(18, 19) For policy-making purposes, the main goal would be to determine whether neighborhood or street indicators exist in the form of "unobtrusive" measures,(20) reflecting neighborhood activity and condition. Such indicators might help the policy-maker in managing the delivery of municipal services; more ambitiously, such indicators might serve as the basis for assessing the quality of neighborhood life, and complement any effort to develop a comprehensive set of social indicators.(21)

Fourth, small-area data, whether available through the census, special surveys, or municipal records, can be used in close conjunction with the field work. In previous studies where such data have been used, they have generally been integrated only after the field work has been completed and in order to test specific hypotheses.

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*For a brief outline of the different variables that might be subject to quantification, see Valentine.(33)

With adequate preparation, however, the data can also be used to guide the field work as it is being carried out, directing the participant-observer's attention to specific neighborhood events while he is still in the field.

To test these four modifications, a field study of seven New York City neighborhoods was designed, with seven participant-observers working in these neighborhoods for a three-month period (the summer of 1970). Since the period of study was so short, there was little hope for developing the highly intimate relationships usually established by participant-observers. The main goal of the study, however, was to test the modifications, and thus this shortcoming was not deemed critical, the assumption being that it could be overcome in the future simply by lengthening the period of work.

II. OVERVIEW OF THE FIELD STUDY

The field study involved the following New York City neighborhoods: Highbridge and Morrisania in the Bronx; Harlem, East Harlem, and the Lower East Side in Manhattan; and Bushwick and Brownsville in Brooklyn (areas A through G, respectively, in Fig. 1). The neighborhood boundaries do not represent political boundaries, but rather reflect the areas covered by each field worker. This group of neighborhoods was not chosen out of any experimental design, but rather was selected on the basis of the individuals available for field work and the location of their prior field experiences. The neighborhoods included an all-black neighborhood (Harlem), a predominantly Puerto Rican neighborhood (East Harlem), a predominantly white middle-class neighborhood (Highbridge), and several highly mixed neighborhoods (Morrisania, Lower East Side, Bushwick, and Brownsville). The group also included some of New York City's well-known poverty areas (Harlem, East Harlem, Lower East Side, and Brownsville), neighborhoods beginning to experience significant deterioration (Bushwick and Morrisania), and a neighborhood undergoing the very initial stages of large-scale ethnic change (Highbridge).

The participant-observers were graduate students recruited from local universities. All had either some formal training in field work or some experience in the neighborhood they were studying; for the three-month period of the study, most lived in or near that neighborhood. Four of the observers were black, and three were white, including one Puerto Rican; one of the observers was female.

The normal routine for each participant-observer was to spend most of his time in his neighborhood, with weekly meetings at some central location for group discussions. During the first six weeks, the participant-observers all worked alone in their own neighborhoods. Later, however, trips were systematically made by each participant-observer to the other neighborhoods as well. The participant-observers all kept diaries of their activities, noting the people they had contacted as well as the most interesting and most noteworthy events that

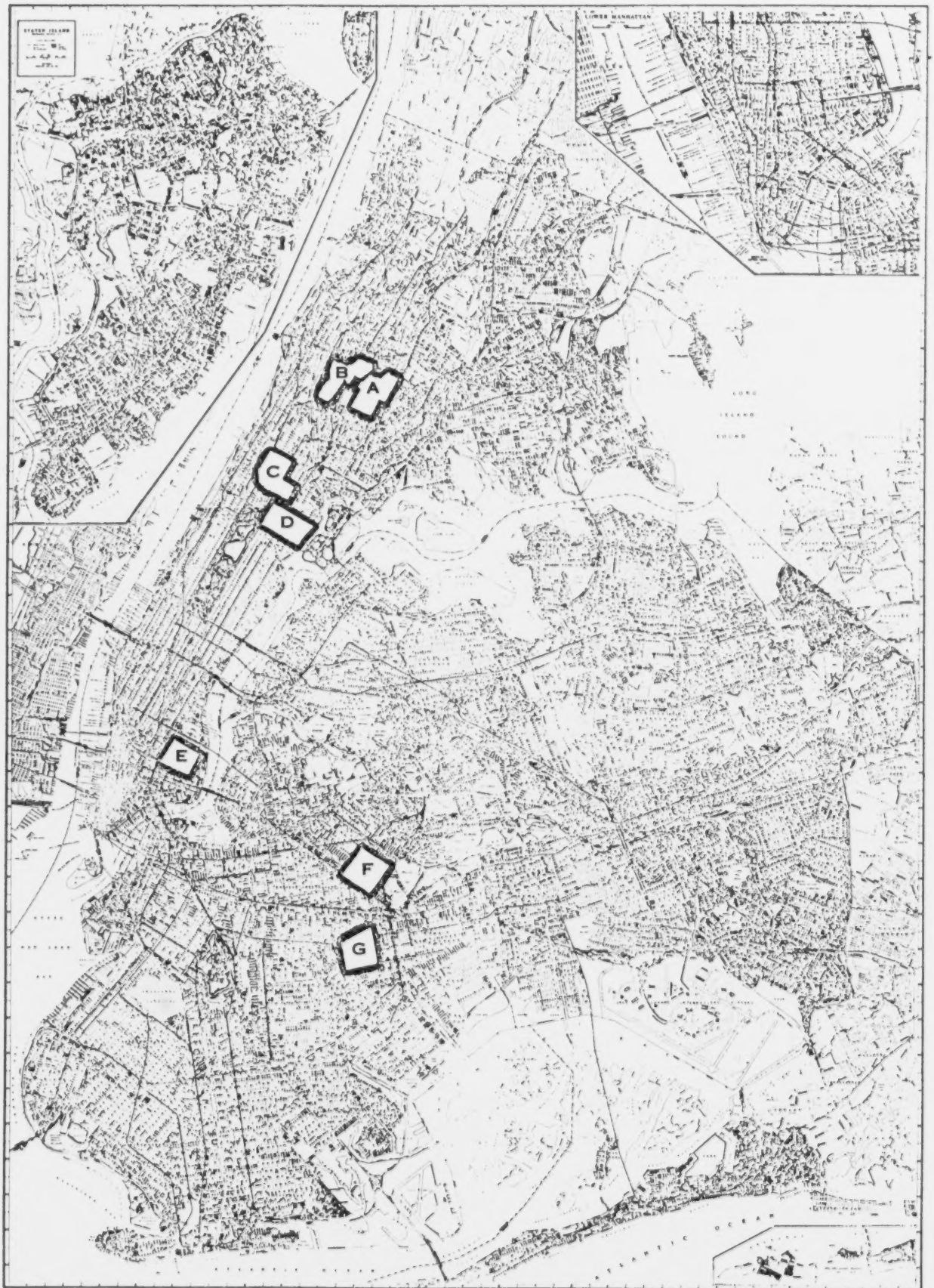

Figure 1
The New York City-Rand Institute Small Area Studies

happened to them during the day. They also filled out data sheets and made maps to complete specific assignments.

The general orientation of the participant-observer was to participate in the neighborhood's street activities (e.g., playing sports, talking in bars, and hanging around the streetcorner). Little effort was made to contact or interview in any orderly fashion the dominant community organizations operating in each neighborhood. Such organizations exist in amazing quantity, and would themselves be ample material for an entire study. Instead, with the focus on street life, the major tasks of the participant-observers were: (a) to determine the kinds of events that could be readily observed and that had bearing on the physical and social condition of the neighborhood, and (b) to study certain municipal problems that exist in varying degrees in many neighborhoods, e.g., the illegal opening and use of fire hydrants. Throughout the study, the emphasis was on developing an appreciation of the neighborhood from the point of view of the residents and their use of the streets.

III. THE PARTICIPANT-OBSERVER IN THE FIELD

First Days in the Field

Each participant-observer was initially assigned an intersection in his neighborhood that had a fire box with a high rate of alarms (though each knew nothing at the outset about any of the alarm history in his area). For the first three weeks, the participant-observers were to use this intersection as a center from which to radiate and to talk to people, determine hangouts, and participate in any street activities. The observers were also asked to carry out two assignments. The first was intended to help them become aware of the street-corner environment, and called for them to map the type of buildings or functional uses of the four corners of twenty intersections, and to count the number of people loitering on the corners or passing through the intersections at a given hour of the day. The second was related to a municipal service, and involved estimating the amount of garbage on one hundred block faces by using a five-point rating scale. In addition, the observers had to try to determine some of the causes of undue garbage accumulation in their areas, and it was in the course of the garbage survey that the boundaries of each observer's area were established (in a special survey of this kind, a field worker can cover about a 30 to 40 block area on a typical week's assignment, though not without some exhaustion at the end of each day).

Among other aspects, the study was designed to determine the different reactions to the "cover" used by the participant-observers. All were told to identify themselves as accurately as possible, i.e., as researchers seeking to understand all aspects of community life and being supported in this endeavor by The New York City-Rand Institute. Typically, most observers found some resentment about research and its ability to make only long-term changes, if any changes at all. The NYC-Rand affiliation stirred negative reactions not, as some had expected, because of its nominal link with

The Rand Corporation in Santa Monica and defense research, but because NYC-Rand was seen as linked to New York City government. In other words, the most suspicion-arousing perception was that the participant-observers were gathering intelligence for a City government that in some local areas has come to be highly distrusted. On the other hand, the NYC-Rand affiliation did lead to some positive reactions in that those more favorably disposed towards the City easily saw that the research could result in more relevant policy recommendations than, say, a university-based research project.

The first days in the field were also interesting in that the observers all had to develop very quickly some kind of daily routine. This involved not only establishing contacts, but also finding some place to go to write notes or even to avoid getting rained upon, some places to eat and rest, and some place where they could be contacted. This routine-seeking seems remarkably similar, in retrospect, to that reported about the new cop on the beat or other street workers.

Finally, and more important methodologically, during the first few days most of the participant-observers reported clear perceptions about the psychological boundaries of their new roles. As an inhabitant of an area or a tourist going through it, one could feel relatively secure and content. As soon as one tried to be a participant-observer, especially by approaching strange people and asking questions, he would become ill at ease and wary. During the very first days, the boundary between personal self and participant-observer could be very easily encountered, as if it physically existed, like Goffman's description of the front and backstages of the waiter and of "regional" behavior.(22) For instance, one of the field workers could watch a local fire with many others and be perfectly satisfied at one moment, but then might take the initiative by making comments or asking questions and become alert and uncomfortable in the next; or, he could try to meet people on the street and feel frustrated at the lack of conversational material at one moment, but then decide to call it a day and feel

happy again in the next. Related to these perceptions of their new role were some tendencies to be overly aware of being an outsider; in a few cases the participant-observers even thought they were being followed. Only gradually did such perceptions disappear, and only with those participant-observers who successfully became an integral part of the neighborhood's street life.

Rotation of Participant-Observers

After the first six weeks, a new routine was added to the participant-observers' regular activities, whereby each one spent a day visiting his colleagues in the other neighborhoods. This rotation proved to be one of the high points of the summer's work, with both negative and positive effects. The negative aspects were that the observers had to abbreviate the work in their own areas and endanger some of their own rapport, first because they would be away visiting other areas and second because as hosts to other observers, they could not follow the same activities as they would have if alone. For instance, black-white pairs of participant-observers were especially conspicuous in dominantly black or dominantly white neighborhoods, and were thus limited to general tours of the area rather than any more serious interactions.

Such negative effects, however, tended to be outweighed by the new perceptions each participant-observer felt were added to his own experiences. First, the observers noted that, in pairs, they tended to perceive more events and found their own dialogue very rewarding. Second, the visits to other areas made them more aware of certain constancies in the environment of their own neighborhoods that they hadn't noticed before. Upon returning to their own neighborhoods, in other words, they had new things to look for and were sensitized to other phenomena previously overlooked. For instance, one observer had not realized how barren his low-income neighborhood was of greenery until he visited another equally low-income neighborhood that was nevertheless filled with small parks and patches of green. Other observers immediately sensed the different levels of street activity in the neighborhoods, or the different types of people hanging around the streets.

Finally, the participant-observers all had a general focal point for their visits in that each was asked to observe a specific municipal service or street activity on each visit, and thus to be able to report on that aspect of the neighborhood on the basis of seeing several areas in addition to having a more intimate knowledge of his own area. The topics covered in this manner were: the use and abuse of fire hydrants, the adequacy of public outpatient facilities, the street activity of police, the role of the Mayor's urban task forces (in which Mayor Lindsay tried to encourage neighborhood-city government interactions through the establishment of local storefront offices nominally staffed by prominent city employees), children's play patterns, and discussions with single adult (and presumably unemployed) men. These topics met with a variety of success. For instance, with the hydrants, where the phenomena were readily observable and limited in scope, the participant-observer was able to produce a fairly complete report. With the outpatient facilities, the phenomena were available for study but too diverse and time-consuming, and the report consisted of a series of visits to clinics with few general conclusions. Finally, with the adult men, the phenomena (in this case life histories) were not readily observable and communication was extremely difficult, and the topic remained essentially intractable.

At this same time of the study, the participant-observers reported and exhibited changes in their own roles. The changes were facilitated by their own progress in the field, by a general meeting in which some of the observations on garbage were reported to relevant officials in City government, and by the visits to each other's neighborhoods. The progress in the field in several cases meant the disintegration of the boundary between personal self and participant-observer. Some observers reported being unable to avoid their participant-observer roles even when not working, and when out on their own time; other versions of the same phenomena were the expressed feeling that the summer's work had become more than a job, or a notable decline in concern over the boundary problem in cases where observations during the first few weeks had been plentiful.

The meeting with government officials took place in early July and was intended as an occasion for exchanging information; the participant-observers provided their field observations and the officials provided their knowledge about problems in the delivery of service. We had hoped that such a meeting could give both sides some valuable insights, and also that the potential policy relevance of the garbage assignment would be more apparent to the students. The confrontation proved to be quite frustrating for both sides, however, with the result that, although valuable information was exchanged, by the end of the meeting neither side fully appreciated or understood the problems of the other. In retrospect, given the tremendous garbage problem in New York, such an outcome was probably inevitable.

The effect of the rotation compounded these events since the participant-observers not only had an opportunity to converse about their field observations, but for the first time, perhaps, could also talk to each other more leisurely about the general implications of their studies and the intricate relationships between their roles, the NYC-Rand Institute, the various neighborhoods, and significant social change.

The outcome of all these changes was that the observers themselves became community advocates, feeling confident that they now understood what was going on in the neighborhoods and thus expressing both their views about the plight of the local residents and their own doubts about the usefulness of research or the ability of a government bureaucracy to cope with the "real problems." At this critical point, all field work had to be suspended for a few days, and we engaged in lengthy discussions in an attempt to reduce some of the conflicts. The main issues involved the observers' frustration over the unlikelihood of any short-term changes, their inability to report, to their own satisfaction, many field observations either for lack of time or appropriate channels, and the poor historical record of research and government action in making meaningful improvements at the local level. Needless

to say, the resolution of these issues was much beyond the scope of the summer study, and we managed to survive only by at least talking them through and in the end, by relying on the strength of personal relationships to re-ignite a basic curiosity about neighborhoods, independent of any hope for immediate change.

Some Research Observations

The effect of having seven participant-observers operating in the field simultaneously was to make clear several important characteristics about the use of participant-observation. Although some of these have been described by previous investigators,[8, 10, 15] their limitations and benefits have not been clearly spelled out.

First, the initial contacts made by each participant-observer reflected a strong bias towards people of the same sex and age. The female participant-observer talked initially to other women on the street, and was the only one to do so, while all of the participant-observers interacted at first with people of approximately the same age (generally older teen-agers and young adults). Such experiences are consistent with previous reports;[16] Whyte and Gans in particular mention the benefits of using their wives to gain entry into the local female communities, and the different interactions that were experienced as part of marriage dyads rather than as single males.[8, 10] But the limitations imposed by an observer's own sex and age have never been clearly tested, and one wonders whether an aged or female Bill Whyte or Elliot Liebow would not have reached entirely different conclusions about their streetcorners; they certainly would have been part of a different crowd. In general, and most importantly, if different neighborhoods have different casts of people dominating neighborhood activity, the determination of a neighborhood's condition on the basis of one participant-observer's reports will be extremely difficult. A logical solution in future studies would be to sample more systematically from the universe of potential field workers; one might employ people of at least two distinct sex and age backgrounds, e.g., males in their twenties and females in their forties or fifties.

Second, the experiences of all the participant-observers confirmed the difficulties in maintaining the fully hybrid role of being both a participant and an observer. On this problem, much also has been written. Bruyn[3] has analyzed the philosophical implications of the two roles and suggests that the dilemmas created by having to fill both roles simultaneously are basically the dilemmas of being a social scientist. But it is Whyte who has described most clearly the slender path that must be followed: the investigator must be careful to avoid becoming either a non-participating observer or a non-observing participant.[8] Others have described the implications of the variant roles between these two extremes.[23, 24]

In the present study, one participant-observer did become highly involved in his neighborhood. As a result of a serendipitous contact early in the study, he was enlisted as a member of a black separatist organization that was prominent in the neighborhood. At first, his reputation was linked to that of the initially befriended person; later, however, he rose to a more central position that was based on his own independent reputation for strong leadership and friendship. At the same time, it was this participant-observer who experienced the most difficulty in reporting his activities, having to consider whether his reports would betray his trusts with neighborhood confidants.[13] Other participant-observers who were not as highly involved in their neighborhood's activities were able to make their reports with greater ease, but at the same time felt frustrated that they could not participate more with the local residents. However, on the few occasions in which they did become actively involved with neighborhood people, they, too, experienced reporting difficulties. There seemed, in other words, to be a continual conflict between the participant and observer role. Because of the conflict, any given individual tended towards one role at the expense of the other, and no individual appeared able to maintain the complete posture of "participant-observer" for any extended period of time.*

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*Barbara Dohrenwend (personal communication) suggests that the participant-observer role is by definition a transitory one, and that it is perhaps best that no person attempt to fill the role for too long a period of time. In this light, it would be interesting to examine the "break" periods or other vacations taken by participant-observers who have spent two or three years on their studies, both from the point of view of the frequency of such breaks and the activities pursued during those times.

IV. APPLYING PARTICIPANT-OBSERVATION TO MUNICIPAL POLICY-MAKING: TWO CASE STUDIES

Participant-observation proved to be useful in two general ways for assessing the impact of municipal services. First, the participant-observers were able to observe and interpret the use of municipal services. The observations and interpretations both yielded insights that can be highly beneficial to the policy-maker. Second, the participant-observers identified various neighborhood events that could be enumerated and that were significant in describing neighborhood conditions and the potential need for services. As illustrative examples of these two uses, two aspects of the summer's field work are described below: (A) the use and abuse of fire hydrants, and (B) observations of streetcorner characteristics in relation to fire alarms.

A. THE USE AND MISUSE OF FIRE HYDRANTS IN NEW YORK CITY*

In New York and other cities, the unauthorized use of fire hydrants has led to undue reduction in local water pressure and wasting of the City's water supply. The subsequent damage to the hydrants has made an increasing number inaccessible to the Fire Department. As part of my work this summer, I have observed how the hydrants are used by local residents, and have compared my observations with current attempts by the Department of Water Resources and the New York Fire Department in preventing hydrant abuse.

The Current Situation

In order for the Fire Department to have quick access to water for fighting fires, hydrants are located with great frequency throughout the City (there are about 100,000 in New York City), and each of them can be easily turned on. An individual hydrant has two nozzles, one larger than the other. The large nozzle gives out 1700 gallons of water per minute,

*This report was written in August 1970 by the author and Linda Fraser, based on the latter's activities as a field worker.

while the small one gives out 650 gallons of water per minute. The water is released by removing the caps on these nozzles and turning the brass bolt on top of the hydrant with a wrench.

During the last few years, the unauthorized use of hydrants has increased rapidly. There is no systematic monitoring of the hydrants, so that the precise increase is unknown (it is estimated that 1000 hydrants are now improperly opened per day). However, from Fire and Police Department observations and resident complaints, it is clear that the unauthorized openings occur much more frequently than before. Another sign of the increase is the growing amount of money spent for hydrant repair. For instance, in 1964, the City replaced 500 hydrant caps; this year it will replace 12,000 of them, at a cost of $8 apiece (the total spent on hydrant repair this year is estimated at $1 million). Aside from the loss of the caps, the main damage the hydrants sustain in being misused involves the brass threads needed for connecting the fire hoses, the inner valves of the hydrant, or the brass bolt which turns on the hydrant (the bolt is easily damaged by improper tools, or it can be sawed off altogether and sold for its intrinsic value). In any of these cases, the hydrant becomes inoperable to the Fire Department (again, the Department of Water Resources estimates that 7 percent of the hydrants are inoperable). Finally, it should be noted that the misuse of hydrants is generally concentrated in a few areas of the City, so that the inoperable hydrants are similarly concentrated, increasing the hazards from the point of view of fighting fires. According to Rand fire project staff, the response time for getting water on the fire may be increased substantially, to the extent that savings made elsewhere in the system are more than offset.

Normally, it is the responsibility of the Police Department to close the open hydrants. The uniformity with which the police carry out this responsibility varies, however, among different areas of the City. For instance, our neighborhood observers have noted that in some cases (Brownsville), the police pass open hydrants without making any attempt to close them; in other cases (East Harlem), the police may make a nominal attempt, while those who have been using the hydrant stand by

and return to it as soon as the police have left; in still other cases (Highbridge), the users may flee and exhibit more fear of the police, but still reopen the hydrant at some later occasion.

In addition to the police role, the City has also begun two programs in the last few years to prevent hydrant misuse. These two programs reveal a very ambivalent attitude in City policy. On the one hand, the City has encouraged the use of hydrants by distributing spray cap attachments; on the other hand, it has discouraged hydrant use by installing hydrant harnesses which only the Fire Department is supposed to be able to detach from the hydrant. I shall briefly describe the nature of these two programs.

The spray cap program is based on the notion that residents should have some source of water for play and wading, particularly in hot weather. The caps contain about three dozen holes and fit onto the hydrant nozzle, but when in use, reduce the loss of water and water pressure substantially. The caps are distributed by two agents, the local police precinct or the Mayor's urban task force, and are supposed to be signed for and returned. Along with the cap, a wrench is also given out. Thus, the spray cap campaign makes two important assumptions: first, that a major use of the hydrants is similar to that provided by a local wading pool, and second, that the hydrant users should take the initiative by obtaining the caps from the local precinct or task force office.

The harness program is based on the notion that certain hydrants must be kept inaccessible to the public. The harness is a thick metal belt which holds the nozzle caps in place; without removing the harness, the caps cannot be removed. So far, about 25,000 harnesses have been installed. The vast majority have successfully prevented further abuse of the hydrants, but in a large percent of the cases, the harnesses have been broken (and the hydrants still misused), or the harnesses are still attached but the hydrants have been severely damaged. Among the damaged hydrants, most typically, the brass bolt is sawed off, but in other instances I have seen hydrants bent at the base or with their bonnets shattered. The response of the Department of Water Resources to this damage is that these hydrants would have been damaged anyway, whether

harnessed or not (since the harnesses were deliberately attached to hydrants in areas of previous hydrant abuse), and that the vast majority remain undamaged and thus are reliably available for use by the Fire Department.

Other devices have been considered by the City, and indeed, are being used by other cities. In each case, City officials are caught between the Fire Department needing quick and easy access to a hydrant and some security device preventing local residents from using the hydrant. They are also aware that any new device (such as securing the brass bolt so that it cannot be turned) is likely to result in some retaliation on the part of residents, so that a short-run increase in hydrant damage can be expected. In some cases, even though no damage has been done directly, hydrants have been rendered inoperable because of garbage or other objects which have been used to stuff or jam the hydrants. However, the hope is that such damaging acts will be limited, and will eventually cease. One variant now being considered in New York is to combine spray caps and harnesses, by harnessing hydrants with spray caps on them. Residents would still need to obtain some sort of wrench, however.

The Observed Use of Hydrants

As a result of my work in Morrisania this summer and visits to the other small areas which are part of our study, I have found the following to be the main uses of hydrants by local residents:

(1) Play. It is clear that many children do wade in the water and are generally satisfied merely by getting wet. However, this is limited mostly to very young children (up to 5-6 years), and to girls. For the older children and most of the boys, the main play activity involves directing the strong hydrant flow at some object or person. This is done by holding a beer can (or similar cylindrical object), which has been completely opened at both ends, near the nozzle of a fully flowing hydrant. The result is a very powerful spray which can be aimed at different objects. People and cars are the objects most often

sprayed. The people rarely get mad, as if they accept the risks in walking down a street with an open hydrant. Cars are another matter, for it may not be so easy for them to turn around and use some other street, and also the children may wave the car through the street (indicating that the car won't get sprayed), and then decide to spray the car if the driver is perceived to be an outsider or of the wrong ethnicity. In general, the objects which are most often sprayed are those perceived as travelling through the area, but not necessarily belonging to it. Buses (and passengers who have neglected to close their windows), for instance, are a good target. My own interpretation of this desire to spray objects is that the spray represents a very powerful force which the children control, direct, and manipulate, and contrasts greatly with the many other aspects of their lives in which all of the powerful forces are out of their control. This contrast may be the reason that fire hydrants have such great attraction in low-income areas. For a change, children can manipulate their environment rather than be manipulated by it.

(2) Games. The open hydrants provide an opportunity for all sorts of games. Two games require the hydrants to be opened full force: in one, the contest is to see who can closest approach the hydrant by walking into its powerful spray; in the other, children ride on wooden crates which sled across or down the street as in surfing. Other games which I or others have seen require only a steady but small flow of water, e.g., racing hand-carved boats down the stream to some finish line and betting on the boats, or rolling wheels through the water and making water tracks with the wheels on the dry parts of the street.

(3) Functional Uses. Many people do not remember that the hydrant's water comes from the same water main as the water in the apartments. Thus, hydrant water can be safely used as a source of

water for drinking, filling jars (I have seen men filling quart or gallon jars, but do not know why), cleaning cars, and even washing dishes. The hydrant water is preferable because it is cooler than the apartment water, but its use in these cases may also indicate that there is no running water in the user's household. Unfortunately, since the hydrant and apartment water are on the same main, a vicious cycle can easily be started: with the greater use of a hydrant, water pressure in the nearby apartments will go down, and with the reduction in pressure, there is more need to use the hydrant and perhaps turn on another hydrant down the street, thus further reducing water pressure. Finally, the hydrants are used to spray the streets, either to cool them off, or to clean them of debris, which only the powerful hydrant spray can often affect.

In all of these uses of hydrants, there is general cooperation within the community among neighbors and between adults and children. A local superintendent, for instance, may take it upon himself to use his wrench to turn on a hydrant for a group of children, or mothers will bring their little children to a hydrant so that they can play in the water. The unauthorized use of the hydrants, in other words, has become a local custom, and is by no means a surreptitious activity carried on by small groups of vandals.

Several observations with regard to hydrants having spray caps or harnesses may be interesting. In general, where one hydrant on the street has a cap and the other is also turned on but without a cap, nobody plays at the capped hydrant. The spray caps are obviously not competitive, but perhaps more important, they represent an imposition by authority (what the City has in effect said is "O.K., if you must play with the hydrant, you'll do it my way."). Water sprays (but ones not involving a hydrant) are also found in many of the public housing projects. That little girls are the main users of these sprays reinforces my interpretation that limited spray and merely getting wet is not the most attractive aspect of hydrant use.

With the harnesses, I have already noted that harnessed hydrants are likely to be damaged. Slightly more difficult to understand, however, is the fact that in East Harlem we found two broken hydrants which were near recreation areas with swimming facilities. A possible interpretation is that the children had no more use for the hydrants, since they could play in water nearby, and that the hydrants could thus be done away with. If this is the case, then the provision of adequate recreation substitutes for hydrant play (that is, even if adequate resources were available) might lead to additional hydrant damage (the hydrant no longer serving an important community function). Certainly the relationship between government action and community reaction is very complex.

Principles for Possible Solutions

Many different alternatives have already been considered in many different cities. Some, like the spray cap and harness programs, have been put into effect. Rather than consider specific solutions, however, I have chosen to emphasize some of the underlying principles which might lead to a more satisfactory situation.

First, I do not want to make any judgment over whether the residents should be allowed to continue using hydrants. If it is decided that they should not, however, and an attempt is made to make the hydrants inaccessible to the residents but not to the firemen, then I strongly suggest that, whatever the change, it be made internally, without any obvious change to the outside of the hydrant. The harnesses, for instance, are unsightly and an open affront to the community, serving as constant reminders that the people have been denied access to the hydrant. It seems that a visible change is more likely to be interpreted by the residents as a challenge, i.e., to learn how to get around the new device, or to make it and the hydrant inoperable. An internal change, on the other hand, would not be as conspicuous and might leave the residents more bewildered. An example of an internal change would be some sort of control of the valve system, preferably at a level higher

than the individual hydrant. It has been suggested at Rand, for instance, that the hydrants be turned off as their normal state, and only be turned on when a relevant fire alarm is received.

Second, if it is decided that residents should have access to the hydrants, then some basis for the open sharing of hydrants (between residents and firemen) should be established. The sharing might be very simple: some hydrants would belong to the community, be identified as such, and not be used by the firemen; other hydrants would belong to the Fire Department and would be made inaccessible to the community. Unlike the harnesses (which do represent one type of "sharing"), no small area would be left entirely without a community hydrant; furthermore, the City and community could decide together which hydrants should be left to the residents, and which to the firemen. Another way of "sharing" the hydrants would be to install some timing device that would allow the hydrant spray to gush at its full force, but only intermittently (e.g., the valve would stay open for three minutes and then remain closed for three minutes). In this case, the residents would be able to have the benefits of the full hydrant flow, but only for half the time (or less), compared with the current situation.

Thirdly, if it is decided to solicit the community's cooperation on any of these matters, communication with the community should be initiated through local groups to which the older children are responsive, not like the precinct or the task force office. The precinct, of course, has entirely negative associations for most youths in low-income areas; the task force offices mainly cater to the adult community, where they have any influence at all (a few of the worst areas from the standpoint of open hydrants have the least effective task forces). There are many indigenous youth groups in these communities, some of which already operate "street" programs, and it might be worth gaining their cooperation instead of using an existing City agency or setting up a new one.

I have purposely made these suggestions on a more general level, and they may sound rather vague. However, I feel that too much emphasis has been given to specific solutions or devices, without sufficient considerations of the general principles involved. If we agree on the principles

first, and look at those which are likely to work and not work, then whole classes of solutions and devices could be discarded or promoted. In addition, we would be less likely to make the same mistake twice. Naturally, my list of principles is not anything near exhaustive, and it would be nice if further discussions can come up with more of them.*

B. QUANTIFYING NEIGHBORHOOD OBSERVATIONS: FIRE ALARMS AND STREETCORNERS

Several assignments were completed in attempting to assess the ease of quantifying field observations and the usefulness of municipal records. As an illustrative example, one assignment, dealing with streetcorner observations and fire alarms,** will be described.

It should be remembered that the alarm records were used initially to locate the exact streetcorner from which each participant-observer began his neighborhood work, with each participant-observer starting at a corner having a high rate of alarms (though no participant-observer knew anything at the outset about his neighborhood's alarm history, or about the reasons for the selection of the particular streetcorner). Such an assignment generally meant that the participant-observer began his field work at a very active and densely populated place in his neighborhood. This saved much time and effort in locating "the action" during the first days in the field.

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*This ends the field report written in August 1970.

**This sub-study was designed with a broader interest in mind: the analysis of the meaning and value of fire alarms as indicators of neighborhood condition and change.(21) One hypothesis that is suggested by this work is that a significantly rapid increase in a neighborhood's false alarms precedes other pathological changes such as excessive building deterioration, undesirably high rates of population turnover, and a rapid decline in the quality of neighborhood life; if the hypothesis is validated, then rising false alarms can serve as an early warning indicator of subsequent neighborhood deterioration, and decreasing false alarms may signify the first stages of neighborhood renovation.

False Alarms

More pertinent to the delivery of fire services, specific observations were subsequently made with the goal of developing insight into the causes of the high and rapidly increasing rate of false alarms. To begin with, the total number of fire alarms in New York City has risen at a very high rate during the last ten years, having tripled from 1959 to 1969 and doubled from 1964 to 1969. As part of this overall rise, however, the proportion of false alarms has risen from 15.9 percent to 30.1 percent. Thus, the number of false alarms has increased disproportionately in a period already marked by rapidly rising total alarms.

Since similar trends have occurred in other major cities, the search for effective measures to reduce false alarms has become increasingly urgent. Most typically, analyses of false alarm incidence have suggested that false alarms occur in or around schools and peak during the non-school hours, so that preventive campaigns have been largely directed towards the school-aged population. In New York City, however, such campaigns have had a diminishing impact. Other preventive measures tried or considered in various cities have been: the physical removal of street alarm boxes with high numbers of false alarms, the surveillance (by police, citizen volunteers, or cameras) of alarm boxes during periods of expected false alarms, and various mechanical alterations of the alarm box itself. In one exceptional case, community vigilantes armed themselves and physically threatened a few youths hours after a series of false alarms, and no new false alarms occurred in the weeks that followed. In general, however, while the measures may have an initial deterrent effect, little long-term change occurs, and the short-term reduction may be accompanied by rises in false alarms at neighboring boxes.

The failure to develop adequate strategies for reducing false alarms has resulted in part from a paucity of information. Because so few perpetrators of false alarms are apprehended, there is little opportunity to study directly the possible individual motives, as has been done, for instance, in cases of arson.[25-27] Instead, researchers have generally

been limited to analyzing the false alarm incidence, and to indicating its important temporal and geographic variations. A complementary way of approaching the problem is to make field observations of alarm box locations (streetcorners) and to compare the observations with the alarm histories of each of the relevant alarm boxes. The individual motives would still not be accessible for study, but the observations could focus on the pertinent streetcorner conditions within which false alarms occur, and might offer a different kind of insight into the false alarm-producing process. In particular, it is not clear whether corners with disproportionately high numbers of false alarms tend to be corners with great or very little activity. Some have hypothesized that false alarms occur near bars and other carry-out food shops where many groups of people stand around; others, however, have countered that the false alarms occur on quiet corners, where there is little likelihood of a perpetrator being seen in action.(28)

In New York City, a study of streetcorners is particularly feasible because fire alarms are recorded according to the location of one of some 15,000 alarm boxes, which are generally placed at every other streetcorner. The alarm boxes are at the disposal of the public, who may use them to signal a call for fire equipment. Upon receiving a call, the Fire Department automatically dispatches fire engines to the site of the alarm box; only after arriving at the scene, and dealing with the incident at hand, does the Department classify the original call according to one of five categories of alarms: (1) a building fire; (2) a non-building (usually garbage or brush) fire; (3) a transportation fire (e.g., a fire in a vehicle); (4) an emergency (valid calls for help but not involving a fire); or (5) a false alarm. Because all alarms thus become associated with a streetcorner location,* there is an excellent opportunity to study the streetcorners in relation to their alarm histories.

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*Many alarms are received by telephone. In such cases, the alarm is still assigned to the nearest streetcorner alarm box for record-keeping purposes.

Streetcorner Observations

Each participant-observer observed four corners in his neighborhood at different time periods. He assessed the number of adults hanging around, the number of children playing in the area, the amount of garbage on the streets, the degree of residential land-use of the streetcorner, and the general condition of the immediately surrounding buildings. The rankings for the number of adults and children were based on the average of the number of people observed at the four time-intervals. The rankings for garbage were derived from a simple rating scheme, in which the amount of garbage on the sidewalks and streets was estimated on three different days according to a five-point scale.* Finally, the degree of residential land-use was established by the ratio of store entrances to residential entrances, while the general condition of the immediately surrounding buildings was derived from the number of vacant buildings and a subjective impression of general building deterioration.

These observations were converted to ranks, with the four corners of each neighborhood ordered from one to four in terms of the degree it exhibited each of the observed street conditions (Table 1). The corners were also ranked according to the magnitude of the different types of alarms (the raw numbers for the alarms are shown in Table 1). None of the participant-observers were told of the alarm histories of their streetcorners until all their field observations had been completed.

Results

The rankings of the different alarm types were correlated with the rankings of the streetcorner characteristics, again within each neighborhood, but using Kendall's τ.[29] For any given correlation, e.g., false

*The type of garbage was assessed with a simple five-point rating scale: 1 = an essentially clean street (sidewalks and gutters); 2 = a street with garbage, but all garbage is properly contained and there is no litter; 3 = a street with garbage that is predominantly properly contained, but with litter and uncontained garbage as well; 4 = a street with garbage that is predominantly uncontained; 5 = a street in which uncontained garbage and litter dominate the entire sidewalk and gutter, to the extent that a pedestrian must deviate several times from his normal walking course.

Table 1

ALARM INCIDENCES AND STREETCORNER RANKINGS FOR FOUR FIRE BOXES IN EACH NEIGHBORHOOD

		NUMBER OF ALARMS (1969)					STREETCORNER CHARACTERISTICS (1 = Most, 4 = Least)				
Neighborhood	Fire Box No.	Bldg.	Non-bldg.	Trans.	Emerg.	False	Adults	Children	Garbage	More residential	Poor bldg. condition
Morrisania	2590	24	45	9	5*	28	2	1	1	3	1
	2707	16	14	3	16	35	3	3	3	2	3
	2711	44	10	6	40	15	1	2	2	4	2
	2749	6	6	0	5	2	4	4	4	1	4
Highbridge	2715	21	4	1	11	22	2	4	2	1	3
	2716	26	15	4	16	35	1	1	1	2	1
	2753	3*	2	0	5	2	3	2	3	4	2
	4738	3	2*	1*	0	1	4	3	4	3	4
Harlem	1376	50	28	4	28	21	2	1	1	3	1
	1385	71	55	3	35	21*	1	3	4	1	2
	1397	40	29	4*	14	25	4	2	2	2	3
	1420	23	9	0	11	16	3	4	3	4	4
East Harlem	1327	12	27	6*	11	19	4	1	3	1	3
	1328	16	6	3	16	17	2	3	4	2	4
	1334	78	98	26	18	29	3	2	1	3	1
	1343	32	76	6	34	42	1	4	2	4	2
Lower East Side	421	13	21	3	15	11	4	4	4	2	3
	432	87	114	56	24	27	1	1	1	4	1
	438	8	12	1	10	13	3	3	3	3	4
	439	53	39	9	26	32	2	2	2	1	2
Bushwick	808	6	5	2	5	30	2	2	2	4	4
	821	15	22	27	9	38	1	1	1	3	1
	822	34	31	9	13	51	3	3	3	1	2
	824	10	15	3	7	48	4	4	4	2	3
Brownsville	1639	22	10	1	17	14	4	4	4	3	4
	1640	151	121	20	39	132	3	1	1	2	1
	1659	96	85	14	31	83	2	3	2	1	2
	1671	30	18	1*	9	32	1	2	3	4	3

*Tie was broken by ranking this box higher on basis of 1968 data.

alarms vs. the number of adults, the different τ's for all seven neighborhoods were calculated and averaged.* Table 2 shows the $\bar{\tau}$'s for all comparisons between alarm types and streetcorner characteristics.

The correlations indicated that all alarm categories were significantly related to each other. It was, therefore, expected that streetcorner characteristics related to one type of alarm were likely to be related to the others as well, and this generally was the case, with garbage (Table 2, col. 8) and poor building condition (col. 10) most closely related to all alarm categories, and residential land-use (col. 9) least related to all of them. Compared to the other alarm types, the false alarm correlations did tend to be among the lower ones in relating to the presence of adults, children, garbage, and poor building condition, and among the higher ones in relating to residential land-use. These tendencies, while not strong, were more in the direction of supporting the hypothesis that false alarms, in relation to the other alarm types, do tend to occur on the quieter corners of the neighborhood, where there are fewer people and there is less commercial activity.

The results do open the possibility of whether some manipulation of streetcorner characteristics might affect the incidence of false alarms. Such a possibility must be tempered by two strong reservations: first, that the data presented are of a correlational nature and do not provide any information on causal relations; and second, that the data bear on streetcorners, and not individual people. Nevertheless, the issue raised in relation to the reduction of false alarms is whether changing the streetcorner environment might not serve as an alternative to the currently pursued strategy of trying to change individual motivations through

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*That is,

$$\bar{\tau}_{A,SC} = \frac{1}{7} \sum_{i=1}^{7} \tau_{A,SC,N_i}$$

for a comparison between a given alarm type and streetcorner characteristic, where A = the alarm type, SC = the streetcorner characteristic, and N_i = neighborhood i.

Table 2

CORRELATION COEFFICIENTS† FOR ALARMS AND STREETCORNER CHARACTERISTICS, AVERAGED ACROSS ALL SEVEN NEIGHBORHOODS

	TYPE OF ALARM					STREETCORNER CHARACTERISTIC				
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
Type of Alarm	Bldg.	Non-bldg.	Trans.	Emerg.	False	Adults	Children	Garbage	More residential	Poor bldg. condition
Building fire	X	.76**	.62**	.86**	.52**	.52**	.38*	.57*	.05	.76**
Non-building fire		X	.76**	.62**	.67**	.29	.29	.59**	.29	.71**
Transportation fire			X	.43*	.48**	.19	.57**	.67**	.10	.71**
Emergency				X	.62**	.43*	.14	.38*	.14	.57**
False alarm					X	.24	.24	.48**	.24	.48**
Streetcorner Characteristic										
Adults						X	.33	.48**	-.24	.38*
Children							X	.67**	-.14	.57**
Garbage								X	-.19	.71**
More residential									X	.05
Poor building condition										X

* $p < .05$; ** $p < .01$.

†The values can range from -1 to +1, with zero indicating a completely random relation between the two variables in question; the significance levels indicate the probability that the value could have been obtained by chance if the variables were really unrelated.

public education programs. The impact of such programs has been questioned within fire departments themselves; it is not clear, for instance, whether education programs exposing children to fire apparatus and firemen merely increase the children's desires to see such resources in real action. On the other hand, a streetcorner strategy would seek to increase whatever deterrent forces exist in the environment. The key to such a strategy, of course, lies in determining whether there do exist deterrent forces, and whether they can be enhanced. This question cannot be answered by the present data, but requires further field experimentation.

Quantifying Field Observations: General Assessment

In general, the various tasks showed that quantification of human events is possible, but is also likely to be highly tedious and difficult. Even determining whether a person is passing through an intersection or hanging around it requires some carefully planned definitions; it entails the same difficulties encountered by investigators trying to code observations of any other complex human behavior.(30) Mapping and counting physical structures, on the other hand, is not as difficult as dealing with human activities. For one thing, many characteristics of the physical environment, like vacant buildings, are not as transient as human activities, and are not influenced by as many outside factors such as the weather, holidays, and time of day. Furthermore, the skills required to make quantitative assessments are different from those needed for successful participant-observation, and it may be that different individuals should carry out the two activities. In particular, once valid street indicators are established, a future arrangement might be to have separate indicator-assessing and participant-observer teams.

V. CONCLUSIONS

This experience with participant-observation showed that there are several obstacles that need to be overcome in using participant-observation as a tool for studying different urban neighborhoods. Certainly a major factor that must be accounted for is the limitation imposed by a participant-observer's own age and sex. In addition, no one should underestimate the sheer physical demand made on the field worker who commits himself to this brand of sidewalk sociology.

The obstacles, however, are far from insurmountable, and the potential payoffs appear to be well worth the risks. First, participant-observation remains one of the few ways a social scientist or policy-maker can uncover the qualitative differences among neighborhood subcultures. One of the assignments that was left incompleted called for the canvassing of a neighborhood's recreation areas, with their location, use, and users to be noted. The reason it could not be completed was that the use of streets for recreation by kids is so intense and imaginative that it makes any distinction between recreation areas and non-recreation areas rather meaningless. As another example, the study of sanitation conditions showed that two neighborhoods could have entirely different problems although residents would make similar complaints. In one neighborhood, garbage had accumulated over a long period of time and was a chronic problem; in another neighborhood, the first signs of poor garbage disposal habits had appeared (a family that threw garbage out the window had just moved onto an otherwise well-kept block). In both cases, the local residents were equally upset and vociferous, and might have responded similarly in an attitude survey, but the garbage "problem" and the potential solutions in the two cases were quite different.

Second, where systematically used, participant-observation can also uncover the quantitative means for assessing neighborhood conditions and change. Here the participant-observer can identify the observable signs in the neighborhood and the meaning of such signs. Out of the present

study evolved several hypotheses about such signs: a shifting ethnic population is reflected by newly closed and opened stores and churches; signs of the least cared for blocks in a neighborhood or of the least desirable neighborhoods are abandoned autos and other dumped garbage; broken family structures are reflected by the lack of dyadic groups of adult males and children (or of nuclear families) walking on the streets together; local unemployment is reflected by the incidence of male-only groups hanging around the street; and the initial vacant building on a block serves to stigmatize a neighborhood in the eyes of its residents, to the extent that continued residence in that area may become undesirable.

These and other hypotheses have to be fully tested in future work. Perhaps the most logical way of testing them would be to carry out a special study combining participant-observation with an area survey. It should be noted, however, that once street indicators have been identified and validated, they can be easily monitored for large sections of a city by a special team of observers or by neighborhood residents themselves, and provide a continual source of information about neighborhood condition and change. Furthermore, signs may be identified for some characteristics, like the age, ethnicity, and income of a neighborhood's population, that otherwise remain unknown except for the diennial census and special surveys.

Finally, given such a framework for developing knowledge about urban neighborhoods, participant-observation can be used to cover neighborhoods in more than one city, and thus form the basis for a broader comparative approach to the study of the urban neighborhood.

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